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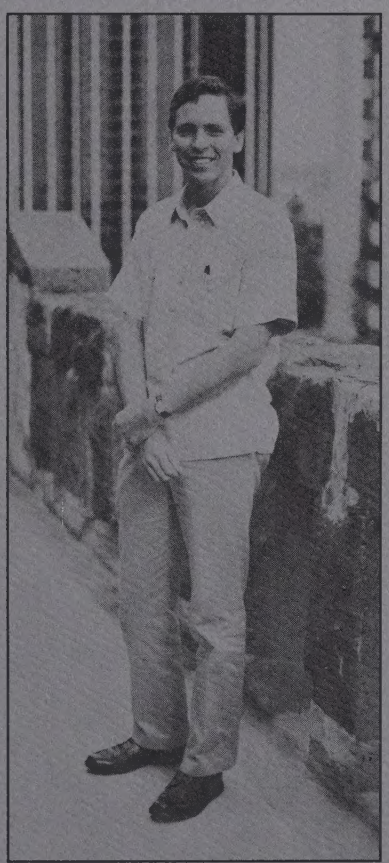
PROFILE: DR. THOMAS S. DYE

This issue of the newsletter features anthropologist Tom Dye, one of the principle investigators in a new project seeking to collect evidence which may support preferential treatment for native Hawaiian fishermen wishing to fish in the Northwestern Hawaiian Islands (NWHI).

Dr. Dye, 36, graduated from Kailua High School and the University of Hawaii, and earned both his master's and doctoral degrees in anthroplogy at Yale University. Currently, he is Assistant Professor of Anthroplogy at Hawaii Pacific College and a research assistant at the Bishop Museum.

For the past twenty years, Dr. Dye has been involved in archeological field research throughout the Pacific region. Between 1968 and 1978, he supervised or assisted in 22 archeological projects in Hawaii, including the Bishop Museum survey and excavation of the H-3 Highway Corridor in windward O'ahu. Since 1978, he has worked extensively in Micronesia, participating in surveys and excavations in the Marshall Islands, Guam, Yap and Palau. Among the many projects Dye has been involved in, he finds one of the most memorable the 1976 Bishop Museum study of two Tongan sites over 3000 years old. Another project of interest to him is found in his publication on "The causes and consequences of a decline in the prehistoric Marquesan fishing industry", currently in press. Keen attention to this particular study is expected, given the belief that the first Hawaiians were originally from the Marquesas islands. Dr. Dye is also proud of his role in establishing and maintaining the archeological fishbone reference collection at the Bishop Musem, which is used to identify fishbone specimens unearthed in excavations. This fishbone collection serves as the foremost method of identifying fish species down to the family name. Dr. Dye mentions that researchers use the fish's jaw bone as the primary source of identification.

In the Native Hawaiian fishing rights project, Dr. Dye will be working as the project's Senior Researcher. His responsibilities will include the review of relevant archeological literature and computerized data, the inventory of ethnographic and archeological collections, and the supervision of a proposed post-project plan involving an archeological expedition to Necker and Nihoa Islands. He will be working woth project coordinator Robert Iversen, whose primary role will be the gathering of kamaaina testimony relating to historical fishing practices of native Hawaiians in the NWHI and managing the project.



Dr. Thomas S. Dye

According to Dr. Dye, the project will first attempt to establish that the NWHI were in fact used by the native Hawaiian fishermen. If this can be done, the project will go on to identify the specific uses made of the area and the time period of use.

It is believed that, historically, inhabitants of Niihau fished in the NWHI on a seasonal basis and that the Hawaiian alii may have hunted seal and other rare indigenous species there. If these beliefs can be confirmed by the project, there will be some evidence in support of granting special consideration for native Hawaiian fishermen wishing to enter the fisheries for bottomfish in the Ho'omalu Zone of the NWHI. (See Volume Two, Number Two, Pacific Islands Fishery News)

Dr. Dye is married to the former Jun Look, whom he met at the University of Hawaii. The couple recently celebrated the birth of thier first child, a daughter whom Dr. Dye hopes he can take along to excavation sites in the near future.

DRIFT GILL-NET FISHING: FIJI MEETING

In response to heightened concern over the potentially devastating effect of drift gill-net fishing on the South Pacific albacore fishery, representatives of several South Pacific island governments met early this month in Suva, Fiji to formulate a collective plan of action. In the meeting held on November 3 and 4 and chaired by South Pacific Forum Fisheries Agency Director Phillip Muller, representatives from American Samoa, the Cook Islands, Fiji, French Polynesia, New Zealand, Tonga and Vanuatu together with advisors from the United Nations Development Program, tuna scientists from the South Pacific Commission and officials from private fishing concerns shared their knowledge and ultimately agreed to join in a cooperative effort to deal with the problem.

The southern albacore fishery is seen as vital to the development plans of all of the South Pacific countries repre-

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sented at the meeting. Tonga is heavily dependent on the albacore fishery and has plans to expand operations. New Zealand, with as many as 200 vessels, together with Fiji and the Cook Islands, have trollers working the South Pacific and all expect to increase effort in the future. French Polynesia is planning to establish a locally based troll fishery, while American Samoa and Vanuatu, although not directly involved in the fishery, depend upon albacore to support their cannery, cold storage and transshipment operations.

Given that the current southern longline albacore fishery is already at maximum estimated sustainable levels, the expected arrival of a fleet of perhaps 80 gill-net vessels from Japan and Taiwan next season was viewed as spelling disaster for established troll and longline fisheries.

economies and the threat posed by gill-netting, the representatives settled on the following plan of action: (1) during the 1988-1989 season, priority will be given to the collection of relevant data in the fishery, utilizing aerial reconnaissance, the placement of observers on troll vessels and the monitoring of landings and transshipments; (2) canneries and cold storage facilities in the region will be encouraged to continue their 1987-1988 season policy of purchasing hook-caught albacore only, and rejecting offers of gill-net fish; (3) representatives will urge the adoption of a region-wide policy against transshipment of gill-netted albacore; (4) access to South Pacific island ports will be denied to gill-net vessels; (5) efforts will be made to generate international publicity to mobilize public awareness of the driftnet issues in the South Pacific; (6) the applicability of international laws, espe-

"Driftnet crewman holds baby swordfish which was entangled in a squid driftnet"
Photo by EARTHTRUST

Additionally, gill-net fishing was recognized as the source of other serious problems. Fish killed and lost when gill-nets are brought on board may actually outnumber the catch landed. Trollers estimate that as much as 50% of their albacore catch is net-marked or damaged, resulting in lower prices at the market. Gill-nets have also proven to be a major navigational hazard, and the extremely dangerous task of clearing gill-nets from fouled propellers has already resulted in recorded crew deaths. The incidental killing of non-target species, including marine mammals such as fur seals and beaked whales, is always an environmental hazard of gill-netting and, worse, indiscriminate killing and waste continues when gill-nets are discarded or lost at sea but continue to catch fish.

In recognition of the importance of the albacore fishery to their respective

cially those relating to marine mammals, marine debris and hazards to navigation, will be investigated; (7) extra-regional support from canneries and transshipment facilities abroad in the ban of gill-netted fish will be sought; (8) the governments of Australia and New Zealand will be requested to raise the drift gill-net issue during southern bluefin tuna trilateral talks with Japan; (9) Pacific island governments negotiating bilateral tuna access arrangements with Japan, Taiwan and Korea will be requested to stress the concern of countries in the region over gill-netting; and (10) the South Pacific Forum Fisheries Agency will be asked to investigate the implications of expanding the U.S. Tuna Treaty area to include the high seas South Pacific fishing grounds.

A follow-up meeting is tentatively scheduled for late January or early February of 1989 in Pago Pago, American Samoa.

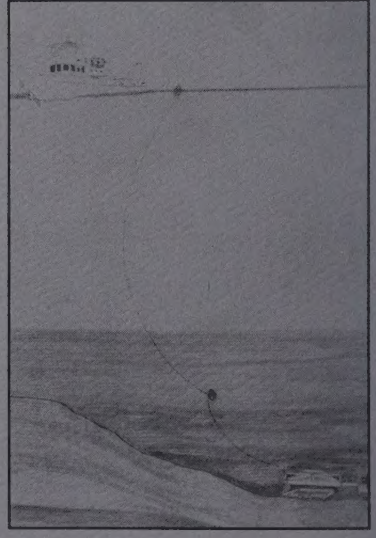
MAUI DIVERS REQUEST EXPERIMENTAL FISHING PERMIT

Maui Divers of Hawaii, Ltd., a company that has been involved in the harvest of precious corals from waters around Hawaii since 1958, has applied for an Experimental Fishing Permit (EFP) which would allow it to harvest up to 50,000 kg of precious corals over a five-year period.

In support of its application, Maui Divers said that it expects to invest approximately $1.5 million of its own funds in the venture, which includes the gathering and furnishing of badly needed information that will help the Council and the National Marine Fisheries Service manage and conserve precious corals resources. Two-thirds of the initial investment will be used to purchase an unmanned submersible and to purchase and modify a 100-150 ton surface support vessel, with the remaining one-third budgeted toward the first year's operating expenses. Maui Divers has promised to use selective harvest methods upon locating coral beds as part of its proposal. Given this, Maui Divers believes the risk of its substantial investment coupled with the difficulty of locating large and productive coral beds in a relatively short period of time, justifies the granting of the EFP.

Until recently, the focus of the precious corals fisheries was the far western Pacific, surrounding Japan, Okinawa and Taiwan. The depletion of coral beds in this area, however, led to increasing interest in

Diagram of Maui Divers proposed unmanned selective harvest submersible
Photo by Maui Divers



other areas, including those within the U.S. Exclusive Economic Zone. Poaching also increased, with 21 documented violations of illegal fishing by Taiwanese and Japanese vessels in the Hancock Seamount area in 1981 and the taking of 100 tons of precious corals from the area north of Gardner Pinnacles and Laysan Island in 1985. This, together with other reports of operations by foreign draggers in the Exclusive Economic Zone of the Northwest Hawaiian Islands, leads Maui Divers to believe that there are more coral beds than those currently listed in the FMP which should be discovered and tapped by domestic fishermen.

Maui Divers proposes to use a video camera attached to the unmanned submersible to record its exploration of the ocean bottom. The video tapes will be archived for future reference and analysis. Coral will be harvested within existing height restrictions, with the finest coral specimens used for the production of fine jewelry by the company's jewelry division and the remainder exported. Initially, Maui Divers plans to operate in the Makapu bed to test its gear and vessel operations, eventually moving to Midway Island, Emperor Seamounts and Milwaukee Banks, which are just beyond the EEZ. This is expected to take up the entire five-year period of the EFP.

Maui Divers feels that it is unlikely that any federal funds will be expended for exploration and development in this area. It feels, therefore, that the substantial investment it is proposing to make justifies the granting of the EFP.

ON THE WATERFRONT

The Honolulu waterfront is buzzing with tuna fishing activity this winter. Not only is the 55-vessel longline fleet landing record catches of bigeye tuna (ahi), but it is also generating remarkable sales of fuel, ice, and bait by fleet supply firms.

To accomodate larger amounts of fish, the United Fishing Agency, Ltd. has doubled the size of its auction floor at Kewalo Basin. A new ice plant at Pier 35 supplements the Hawaiian Tuna Packers' ice production at Kewalo Basin. Fuel is supplied by tanker trucks which deliver to dockside, primarily at Kewalo Basin and Pier 35. Bait and longline gear are sold by a firm at Pier 35, and bait is also available through a fishermen's cooperative which rents freezer space at Kewalo Basin.

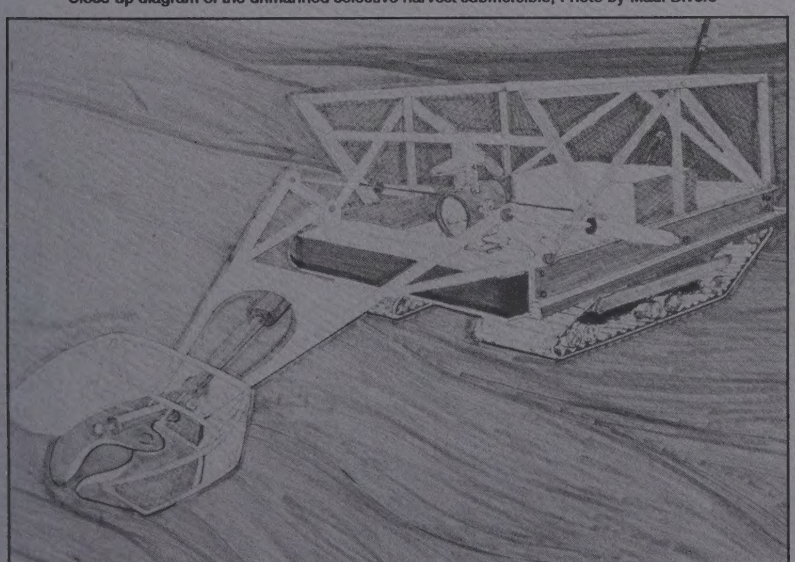
Depending on boat size and trip length, a longline vessel may load from 20,000 to 65,000 pounds of ice, costing 2 cents per pound. Each trip also requires an average purchase of $4,000 - $4,500 of diesel fuel (78 cents per gallon). Bait expenses average about $1,200 per trip (80 cents/lb). Food for the crew may cost from $500 to $1,000 per trip, depending on how well they eat. Thus, a typical longline fishing trip involves up-front expenses in the $6,500-$7,000 range, and the 6-month bigeye fishing season generates an average of about $65,000 in fleet support business for each longliner.

With the Honolulu longline fleet numbering 55 boats and growing, fleet support sales this winter could easily top $3.5 million. It would not be surprising if the sales value of the longline catches reaches $8 million this winter.

Fishing is big business for the Honolulu waterfront.

United Fishing Agency's expanded floor space; Photo by kaili chun

Close-up diagram of the unmanned selective harvest submersible; Photo by Maui Divers



NWHI KAHALA CIGUATERA TESTING PROJECT

Dr. Yoshitsugi Hokama, of the University of Hawaii School of Medicine Department of Pathology, is working with the Council on an informal project designed to test for Ciguatera in Kahala (Seriola dumerili) caught in the Northwestern Hawaiian Islands (NWHI). This pilot project consists of three major objectives: The first is to evaluate toxicity levels in Kahala caught throughout the NWHI with the intent to identify where and when stocks of Kahala can be harvested that are safe to eat; the second to evaluate the newly developed 1-step ciguatera testing procedure; and finally, to contribute to the examination and research of the toxin's potential for medical use.

Kahala, although abundant, are

an underutilized resource of the NWHI. Due to the Kahala's proclivity toward ciguatera, the United Fishing Agency will not sell the fish, and when it is available dealers are hesitant to purchase it. Consequently, fishermen routinely discard Kahala and there are reports that as much as 5000 pounds of Kahala are discarded during the course of a typical fishing trip.

Fishermen cooperating in the project provide the Council with depth and location information for Kahala caught at various locations in the NWHI. This information may help to further the potential for utilizing a presently wasted fishery resource.

The project will also assist Dr. Hokama in evaluating his newly-developed 1-step test for ciguatera. Although the accuracy of Dr. Hokama's 6-step test is already generally accepted, the new 1-step test will provide fishermen with a simpler method of testing fish for ciguatera at sea. The development of the 1-step test was recently funded by the Pacific Fisheries Development Foundation (PFDF) and the Department of Land and Natural Resources (DLNR) of the State of Hawaii.

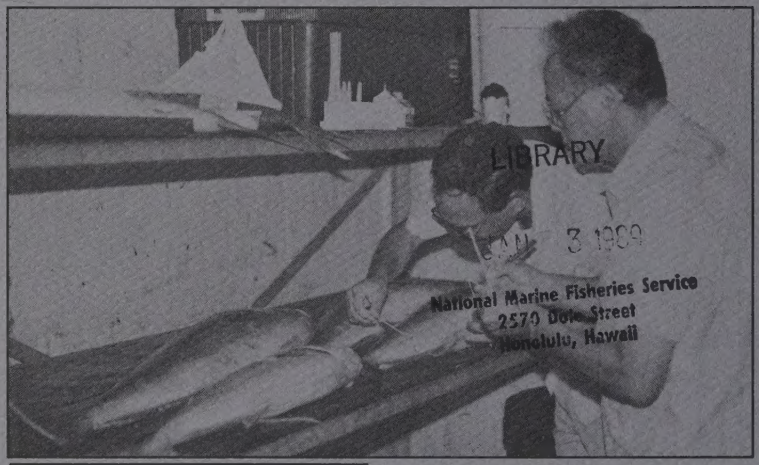
Thus far a total of 13 samples have been tested from 7 different areas in the NWHI. Sample fish were caught from randomly chosen locations beginning at Necker Island and continuing up through Kure Atoll. Although full analysis is not yet complete, preliminary results show that fish from different areas have different levels of toxicity. Generally, Kahala caught farther up the island chain have lower concentrations of the toxin.

Lastly, the Ciguatera project may contribute to furthering medical science. The pilot project plans to acquire approximately 2,000 pounds of ciguatoxic fish which Dr. Hokama will ship to Dr. Takeshi Yasumoto, a colleague in Japan. Dr. Yasumoto, a professor in the Faculty of Agriculture and Hygiene at Tohoku University in Sendai Japan, and a recognized world authority on marine toxins, will work to reveal the chemical structure of the ciguatoxin pathogen.

The contaminated fish obtained through this Council project will enable Dr. Yasumoto to extract enough ciguatoxin to analyze its' chemical design. Once this is known, the toxin can be synthesized under laboratory conditions. That, in turn, will provide sufficient material to allow research into its' potential for medical use.

If this pilot project shows promise, it may receive funding for its continuation. A funding request is now under consideration by the Council.

Dr. Hokama and assistant testing for ciguatera in Kahala; Photo by John Sproul



Spiny Hawaiian Lobster Bisque

From the Maile Room of the Kahala Hilton

5 spiny lobsters
1 medium onion
1 medium carrot
2 leeks
3 stalks celery
1 clove garlic
1/2 cup chopped parsley
1 bunch thyme, 1 cup dry white wine
1 bay leaf, 2 tablespoons tomato paste
6 peppercorns, 2 quarts fish stock
1 bunch dry fennel, salt and pepper
1/4 cup olive oil, 1 quart light cream
brandy, 3 cups chopped tomatoes

Clean lobsters and cut the meat of four into 1-inch pieces, reserving one lobster tail for presentation. Dice onion, carrot, leeks, celery, and garlic; combine with parsley and set aside. Prepare a spice bag by combining thyme, bay leaf, peppercorns and dry fennel. In a casserole dish heat olive oil to the smoking point, saute lobster pieces about 10 minutes or until bright red. Pour in three quarters of the brandy and flame. Add diced vegetables and saute for 10 minutes. Deglaze with white wine and reduce completely, then add tomato paste. Add tomatoes, spice bag, fish stock, salt and pepper. Bring mixture to a boil, reduce heat, simmer gently for 40 minutes. Strain through a china cup strainer, squeezing through all the vegetables and lobster meat. In a small saucepan bring cream to a boil and reduce to half. Cut reserved lobster tail meat into small pieces. In a separate saucepan saute lobster tail meat. Flame with remaining brandy. Add lobster bisque and stir in reduced cream. Adjust seasoning with salt and pepper to taste.

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